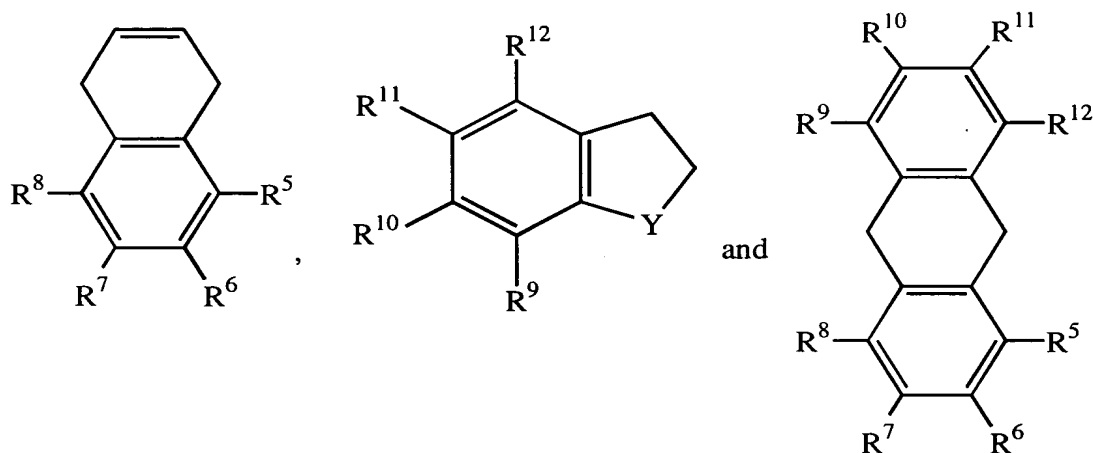


## CLAIMS

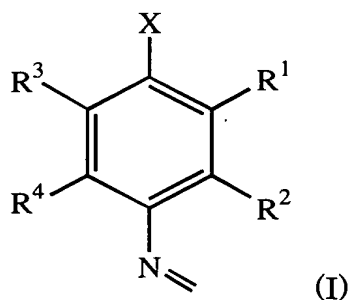
1. A method for marking a liquid petroleum hydrocarbon; said method comprising adding to said liquid petroleum hydrocarbon at least one dye having an unsaturated cyclic nucleus comprising at least nine ring atoms, and having at least one  $(\text{CN})_2\text{C}=\text{}$  substituent and at least one  $\text{Ar}\cdot\text{N}=\text{}$  substituent ; wherein Ar is a substituted aryl group.

2. The method of claim 1 in which the unsaturated cyclic nucleus is selected from among



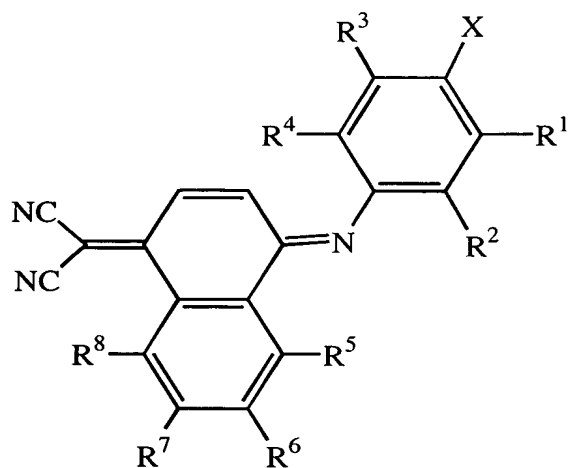
wherein Y is  $\text{CH}_2$ ,  $\text{NR}^{13}$  or O; and  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$ ,  $\text{R}^9$ ,  $\text{R}^{10}$ ,  $\text{R}^{11}$ ,  $\text{R}^{12}$  and  $\text{R}^{13}$  independently are selected from hydrogen, halo, cyano, nitro and organic functional groups.

3. The method of claim 2 in which the  $\text{Ar}\cdot\text{N}=\text{}$  substituent has formula (I)

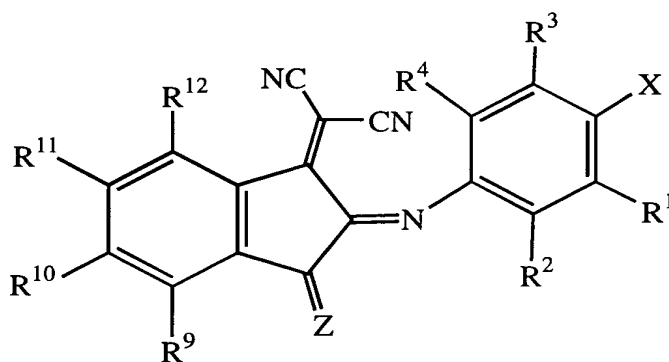


wherein X is amino, substituted amino, hydroxy or alkoxy; and R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> independently are selected from hydrogen, amino, hydroxy, halo and organic functional groups.

4. The method of claim 3 in which said at least one dye is selected from among



and



wherein Z represents O or C(CN)<sub>2</sub>.

5. The method of claim 4 in which R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> independently are hydrogen, alkyl, halo, amino, substituted amino, hydroxy or alkoxy; R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup> and R<sup>12</sup> independently are hydrogen, alkyl, halo, cyano or nitro; and X is NR<sup>14</sup>R<sup>15</sup>, wherein R<sup>14</sup> and R<sup>15</sup> independently are hydrogen or alkyl.

6. The method of claim 5 in which Z represents  $C(CN)_2$ ;  $R^1$  and  $R^3$  are hydrogen; and  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$  and  $R^{12}$  independently are hydrogen or alkyl.

5 7. The method of claim 1 in which said at least one dye has an absorption maximum in the range from 600 nm to 1000 nm.

8. The method of claim 7 in which each dye is present in an amount from 0.01 ppm to 2 ppm and has an absorption maximum from 700 nm to 1000  
10 nm.

9. The method of claim 8 further comprising at least one dye having an absorption maximum from 500 nm to 700 nm.

15 10. The method of claim 8 in which at least two dyes are present, each of which has an absorption maximum from 700 nm to 1000 nm.